Physicists and medics set out strategy on physics for health

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Following a workshop hosted by the CERN European particle physics laboratory in February, doctors and physicists today published a strategy for harnessing physics for health. Techniques developed for physics research have a long history of application in medicine. Today's news recognises that synergy, and sets out a programme of strengthened collaboration.

The workshop, which was the first of its kind, brought together some 400 healthcare professionals, biologists and physicists to examine the increasingly important interface between physics and health. Over recent decades, many important diagnostic and therapeutic techniques have been built on either basic physics principles, or the tools developed to conduct physics research. Notable examples are the technique of positron emission tomography (PET), which emerged in the medical community, but whose technology owes much to research in particle physics.

"Back in 1977 here at CERN we took the first PET images of a small mouse. In those early years, many physicists who were involved in developing new techniques for medical imaging had been originally trained as particle physicists," explained PET/CT pioneer David Townsend, Head of PET and SPECT Development at the Singapore Bioimaging Consortium. "Today, physicists work on various aspects of the instrumentation for medical imaging as well as in developing devices to improve surgery techniques, and assisting in the testing of new drugs."

While similar case studies abound, the workshop took a forward look, addressing the question of how the physics community can ensure that developments made in the name of physics will continue to spur further advances in medicine. Its objective was to align the needs of the medical community with innovation being made in the name of research.

"These workshops are very useful because often medical doctors and physicists may not know which aspects of their work will be relevant to one another," said Gillies McKenna of the CR-UK/MRC Gray Institute for Radiation Oncology & Biology at the University of Oxford, UK. "When they can present the questions that they are trying to ask, the technologies they have available to one another, they can certainly realise: "yes I know how to solve this problem or I know which question this technology could be used to address". And so, bringing groups together in a workshop can be very useful way of initiating the teams that you then need to put together to address new scientific questions."

Professor McKenna's view was echoed by Purificación Tejedor del Real of the EU Health Directorate, who added: "This workshop is a meeting point for physicists, doctors, biologists and researchers. It avoids everyone working in isolation. Projects carried out by physicists can be of benefit to those doctors who work on them. We must build on this collaboration between particle physics researchers and the medical community."

More information: The strategy paper can be found here cdsweb.cern.ch/record/1269323/files/PHEE-10_EN.pdf

Provided by CERN